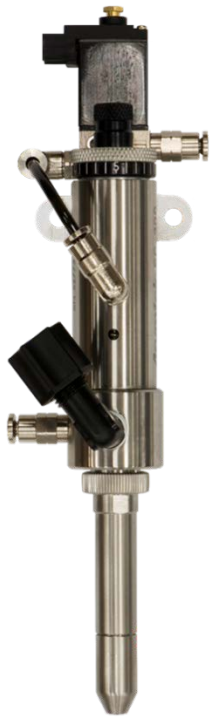
SC-300 Swirl Coat® Applicator

Versatile Coating in Three Modes

Features and Benefits

- The Core SC-300 Swirl Coater Fluid System offers two modes of operation in one applicator (dual-mode) – bead/monofilament and bead/swirl
- The Prime SC-300 Swirl Coater Fluid System offers three modes of operation in one applicator (tri-mode) – bead, monofilament, and swirl
- Handles a wide range of conformal coating materials and is ideal for solvent or solvent-less formulations
- Easy to clean and maintain – minimal wetted parts, smooth internal surfaces, and exposed splines
- Optional Four-Position Tilt accessory features the standard vertical position and tilts the applicator at 30 degrees in four positions
- The SC-300 is also available in Dual-Simultaneous configurations – coating process time is reduced by 50%



SC-300 Dual-Mode

The Core and Prime SC-300 Swirl Coat® Fluid Systems, provide versatile coating capabilities for high-viscosity coating materials. The SC-300 handles a wide range of materials, varying in viscosity from 30 to 3500 mPa-sec (30 to 3500 centipoise).

Laminate concentric flow provides thin and consistent coating thickness and symmetric fluid distribution. In addition, the SC-300 requires no special adjustment during re-assembly – which results in repeatable applicator response time. For a broader selection of spray patterns, one of three airflow extensions can be fitted onto the main assembly. The airflow extensions along with the three spray modes provide coating patterns to fit your application.

Easy Coat® software creates process synergy between the applicator and platform design through routines and validation steps that can be used to define the optimal start and stop points during production.

The high flow rate produces film builds quickly, and the air and fluid chamber are co-located to ensure rapid response to changes during operation – no long air-lines to delay applicator response.

The Core SC-300 fluid system includes one nozzle, one 1-gallon fluid reservoir, one dual-mode applicator, and two manual pressure regulators with gauges. The Prime SC-300 fluid system includes your choice of three nozzles and two fluid reservoirs of either 1- or 5-gallon capacity. Fluid pressure is controlled electronically through Easy Coat software. One tri-mode applicator and one fluid filter is also included.

The SC-300 Swirl Coat Fluid Systems are also available in Dual-Simultaneous configurations.

The SC-300 applicator is intended for use with the Select Coat® SL-940 conformal coating system.

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SC-300 Swirl Coat® Applicator Specifications

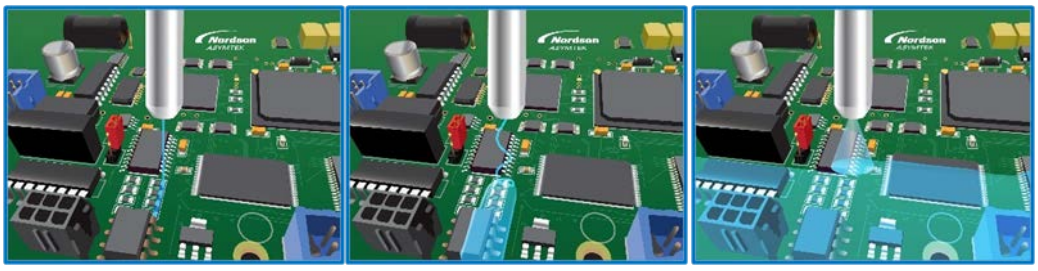
Applicator Parameter	Bead Mode	Monofilament Mode	Swirl Mode
Typical fluid dispense pressure	7.0-413 kPa (1.0-60 psi)	7.0-413 kPa (1.0-60 psi)	60-172 kPa (10-25 psi)
Air pressure	No air	Low	High
Film pattern width	2.5 to 6.4 mm (0.10 to 0.25 in.)	6.4 to 13 mm (0.25 to 0.50 in.)	6.4 to 19 mm (0.25 to 0.75 in.)
Material viscosity	30 to 3500+ mPs (30-3500+ cPs)	30 to 3500+ mPs (30-3500+ cPs)	30 to 3500+ mPs (30-3500+ cPs)
Application thickness	125 to 500 µm (5 to 20 mils)	100 to 300 µm (4 to 12 mils)	13 to 75 µm (0.50 to 3 mils)
Edge tolerance	± 0.75 mm (0.030 in.)	± 1.0 mm (0.040 in.)	± 2.0 mm (0.080 in.)
Transfer efficiency	100%	Up to 100%	95 – 99%
Coating velocity	254 to 508 mm/sec (10 to 20 in./sec)	127 to 254 mm/sec (5 to 10 in./sec)	127 to 381 mm/sec (5 to 15 in./sec)
NOTE: This chart is for comparison purposes. Film thickness, edge tolerance and coating velocity are very much fluid dependent. Application requirements and material properties affect results.			

Modes of Operation

Bead: A stream of material is applied to the circuit board in areas where components are very close to non-coating or keep-out areas, or extra material is required for protection of high-impedance areas. The bead may also be used as a spot command for single coating of a single test point or component.

Monofilament: This pattern is created by controlling the fluid pressure and material flow passing through the nozzle. Auxiliary air circulating through the air passage strikes the material at a precise angle, causing it to spin on its axis and form a conical, looping pattern. The monofilament pattern is ideal for dispensing broad pattern widths, while maintaining good edge definition, resulting in faster cycle times.

Swirl: The swirl pattern is achieved by increasing air pressure and lowering flow settings. Angled jets impinge air upon the pressurized material exiting the nozzle creating a conical, swirling pattern. The swirling action helps maintain pattern shape resulting in excellent width control. Because the air jets cause slight atomization of the material, extremely thin film builds are possible. The mode is ideal for applications where moderate selective coating and thin film builds are required.



Bead Monofilament Swirl

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SC-300 Swirl Coat® Applicator

Dual Simultaneous – Additional Benefits

With the dual-simultaneous configuration, the SL-940 system can coat two parts (multiple-up) at the same time. Processing two parts in parallel significantly improves the throughput, while maintaining high yield. The actual conformal coating process time is reduced by 50%, so that throughput performance can be significantly increased – especially when conducting a high takt time conformal coating process with few overhead movements.

Two of the same applicators are installed and operate simultaneously. When there is no need for simultaneous conformal coating, Easy Coat® software allows the programmer to disable the second applicator as part of the programming.

- Coat two parts at once – reducing overall cycle time
- Enable the second applicator as needed
- Fully adjustable pitch

Dual-Simultaneous Programmable Pitch

Four-Position Tilt – Additional Benefits

Quick response time improves throughput – the Four-Position Tilt option features the standard vertical position and tilts the applicator at 30 degrees in four positions: right, left, forward, and backward in 90 degree increments.

Through Easy Coat software, a programmer can set and modify specific tilt and rotate parameters for each coating element.

Vertical

Tilt Right

Tilt Left

Tilt Forward

Tilt Backward

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